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U S DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

TRANSMITTAL LETTER TO THE UNITED STATES
DESIGNATED/ELECTED OFFICE (DO/EO/US)
CONCERNING A FILING UNDER 35 U.S.C. 371

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INTERNATIONAL APPLICATION NO.
PCT/DE00/03482

INTERNATIONAL FILING DATE
OCTOBER 2, 2000

PRIORITY DATE CLAIMED
SEPTEMBER 30, 1999

TITLE OF INVENTION

TEXTILE CLOTH FOR WIPING FLOORS

APPLICANT(S) FOR DO/EO/US

GREGOR KOHLRUSS ET AL

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☒ This is an express request to begin national examination procedures (35 U.S.C. 371 (f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(I).
4. ☒ A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.
5. ☒ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
 - a. ☒ is transmitted herewith (required only if not transmitted by the International Bureau)
 - b. ☐ has been transmitted by the International Bureau.
 - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☒ A translation of the International Application into English (35 U.S.C. 371(c)(2)).
7. ☐ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3)).
 - a. ☐ are transmitted herewith (required only if not transmitted by the International Bureau).
 - b. ☐ have been transmitted by the International Bureau.
 - c. ☐ have not been made; however, the time limit for making such amendments has **NOT** expired.
 - d. ☐ have not been made and will not be made.
8. ☐ A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☐ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
10. ☐ A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11. to 16. below concern other document(s) or information included:

11. ☒ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☒ A **FIRST** preliminary amendment.
☐ A **SECOND** or **SUBSEQUENT** preliminary amendment.
14. ☐ A substitute specification.
15. ☐ A change of power of attorney and/or address letter.
16. ☒ Other items or information:

PCT/ISA/210 - Int'l. Search Report (English)

1 SHEET OF FORMAL DRAWINGS

Applicant Claims Priority under 35 U.S.C. §119 of GERMAN Application No. 199 46 939.3, filed: SEPTEMBER 30, 1999.
Applicant Claims Priority under 35 U.S.C. §120 of: PCT No. PCT/DE00/03482, filed: OCTOBER 2, 2000.

[illegible]

19. The cloth for wiping floors according to claim 15, characterized in that with its outer edge, the textile material (3) is secured with its cleaning side on the edge of the reinforcing strip (4); and that the reinforcing strip (4) is folded over backwards and secured on the back side of the textile material (3).

ABSTRACT

The present invention relates to a textile cloth (1) for wiping floors. The cloth consists of a flexible textile material (3) and can be detachably fixed to a tentering frame (2) of a manual cleaning device. The wiping cloth (1) at least partially protrudes over the holding surface of the tentering frame (2) with the edge areas thereof and is stiffened in the edge areas. The aim of the invention is to obtain better cleaning effects and a higher dimensional stability. To this end, flat reinforcement stripes (4) are mounted to the textile material (3) in a fixed manner and at least partially along the edge areas.

TEXTILE CLOTH FOR WIPING FLOORS

The present invention relates to a textile cloth for wiping floors that is made of a textile material with bending softness and can be fixed in a detachable manner on a tentering frame of a manual cleaning device, whereby the cloth for wiping floors projects at least partly sideways beyond the surface where it is held on the tentering frame, and is reinforced in these edge areas.

Floor cleaning devices that can be handled by hand for cleaning floors and possibly walls in wet and dry ways, and where a tentering frame is mounted in front on the handling bar, are known in a multitude of different designs. A textile cloth serving as the actual cleaning element can be mounted on said tentering frame. As a rule, such a textile cloth is secured by means of flaps of the tentering frame, which can be spread or folded open. These flaps engage corresponding pockets or tabs provided on the cloth for wiping floors. Such designs offer the basic benefit that the wiping cloth can be easily replaced.

The cloth for wiping floors is clamped onto the clamping or holding surface of the tentering frame, the latter being directed downwards, in such a way that the cleaning side of the textile cloth actively doing the cleaning work is directed outwards, i.e. it is directed downwards as well.

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bending stiffness of the line-shaped outer edge, but does not stiffen the area of the projecting zone protruding crosswise in relation to the outer edge. As an alternative measure for obtaining a reinforcement, it is known from EP 0 664 100 A1 to fold the edges of the cloth for wiping floors over and onto the upper side, and to secure the edges there by sewing or by gluing them to the upper side. However, the textile material of the wiping cloth is relatively soft or slag within itself in terms of its bending property for assuring a good cleaning effect. Therefore, the substantially line-shaped seams or glued seams in turn will in any case only lead to increasing the dimensional stability in the direction of the seam, i.e. achieve such stability only in the direction of the edges. In the transverse direction, however, where experience has shown that the tendency to undesirable bending or throwing of folds will particularly occur due to the forces occurring in the wiping process, the dimensional stability is not adequate. Even the textile material mounted there in a double layer will exhibit only low inherent stiffness within the zone of its outer edges.

In view of said problems, the present invention is based on the problem of providing a textile wiping cloth for wiping floors that incorporates the features specified above. In its protruding edge zones that project sideways beyond the surface of the tenting frame that is holding

the wiping cloth. Such a wiping cloth has enhanced inherent stiffness and dimensional stability, notably both in the direction of the edge and transversely to said direction as well.

For solving said problem, the invention proposes that at least partly flat stiffening strips are attached in a fixed manner to the textile material along the edge areas.

The stiffening strips as defined by the invention are forming flat reinforcement elements that are fixed on the back side of the floor wiping cloth in the edge areas projecting beyond the holding surface of the tenting frame.

A special advantage of the embodiment as defined by the invention lies in that the textile material of the cloth for wiping floors, which is inherently soft in terms of its bending property, is flatly supported by the reinforcing strips, i.e. its rigidity when bent is increased both lengthwise and crosswise in relation to the expanse of the edges. As opposed to the line-shaped reinforcements known until now in the form of seams or bars, the edge zones are thus provided over the expanse of their area with increased inherent stability and dimensional stability for the first time.

also over the entire outer edge, the bending stiffness is optimized in that direction as well.

As an alternative, it is, of course, conceivable also to attach reinforcing strips only to individual edge areas or by sections. In this way, it is possible, for example to realize special edge or corner reinforcements.

Preferentially, the reinforcement strips have a higher bending rigidity than the textile material of the wiping cloth. This dimensional stability of the reinforcement strips can be predetermined practically without any restrictions by selecting materials with lesser mechanical flexibility and/or by selecting suitable dimensions, for example with respect to the thickness of the material.

For example, the reinforcement strips may consist of a textile material. This material should be, for example a fabric or nonwoven material with harder and/or thicker threads than those of the wiping cloth, so that such a material will have a higher inherent stiffness. Plastic fabrics, which are proof to rotting, are well-suited for this purpose as well.

Alternatively, the reinforcing strips can be made of a felt material. Suitable felt materials are available with material thickness values of a few millimeters and exhibit good dimensional stability especially as their thickness

increases. Yet such materials nonetheless have an inherent damping effect, so that the risk of damaging furniture or foot ledges is reduced when such a wiping cloth is used for wiping floors. Furthermore, the felt can be produced and processed in easy ways, for example sewn; it is proof to rotting, and it exhibits absorptive power and stores moisture to a certain extent. This may be entirely beneficial for certain cleaning applications. Furthermore, the fully impregnated felt material has an increased inherent weight, which causes the edges to be fully and flatly pressed against the surface of the floor.

According to another alternative, the reinforcing strips are made of a plastic foil material. Such a plastic foil possesses good elasticity when subjected to bending, and good dimensional stability, as a rule, even when it has a relatively low thickness. This means, furthermore, that the wiping cloth will be only insignificantly thicker in the edge areas even when provided with the reinforcing insert as defined by the invention.

The dimensional stability and the bending stiffness of the reinforcement strips as defined by the invention can be raised further by equipping such strips with reinforcing ribs. Such reinforcing ribs are formed, for example by bridges extending in the longitudinal and/or transverse directions, or in a crossed way, and can be joined with the

basic material of the reinforcing strips or shaped on the latter by molding. For example, strips of felt can be equipped with plastic ribs, or strips made of plastic foil material can be provided with ribs molded onto the strips, or with stiffening corrugations shaped on the plastic foil material. One advantage offered by such reinforcing ribs is that the bending stiffness can be raised with only minor additional material expenditure in individual areas as required.

For securing the stiffening ribs, it is possible to glue or sew them to the textile material of the wiping cloth. Owing to the dimensional stability of the stiffening ribs it will suffice if point- or line-like connections between the strips and the textile material are produced, so that these reinforcing ribs are safely secured and cannot slip. It is possible also, of course, to flatly glue or sew them to the textile material a number of times in order to produce a safe bond. It is conceivable also, furthermore, to select other connection possibilities.

Furthermore, it is advantageous if the textile material of the floor wiping cloth is folded over upwards around the reinforcing strips. In this way, it will be assured that the cloth for wiping floors has a surface that is actively cleaning along its edges as well. Moreover, the reinforcing strips are safely framed in this way and frizzling of the

textile material is safely excluded along the edges without any additional hemming of the latter.

According to a particularly advantageous possibility for securing the reinforcing strips on the textile material, provision is made that the textile material is fastened on its outer edge on the edge of the reinforcing strip with its cleaning side, and that the reinforcing strip is folded over backwards and then secured on the back side of the textile material. Such a way of securing the reinforcing strip offers the special advantage that the stiffening strip is particularly safely fixed in the edge zone of the cloth for wiping floors, and the connection seam is thus completely covered at the same time and protected in this way against damage of any kind.

The textile material preferentially consists of a carrier fabric, to which fibers that are actively cleaning are attached on the cleaning side. While the carrier fabric may consist of, for example a hard-wearing material with a long useful life, whereas a cleaning velvet-type material consisting of, for example so-called micro-fibers or the like that has a particularly good cleaning effect, is attached to the cleaning side.

The wiping cloth is usefully provided with an about rectangular cut.

An exemplified embodiment of the invention is explained in greater detail in the following with the help of the drawing, in which:

FIG. 1 shows a cross section through a first embodiment of the cloth for wiping floors as defined by the invention.

FIG. 2 is a sectional view with a cut through a second embodiment of a cloth for wiping floors as defined by the invention.

FIG. 3 is a schematic top view of a cloth for wiping floors as defined by the invention; and

FIGS. 4, 5 and 6 show other embodiments of cloths for wiping floors as defined by the invention, shown by schematic top views as in FIG. 3.

In all representations according to FIGS. 1 to 6, the same reference numerals are used in the following if they pertain to the same components.

FIGS. 1 and 2 show cross sections through the edge area of a cloth 1 for wiping floors as defined by the invention, which is mounted on a (partly indicated) tenting frame.

The cloth 1 for wiping floors consists of a cut from a relatively bending-soft textile material 3 that is provided on its cleaning side with a cleaning velvet 3a.

In the edge area shown, a reinforcing strip 4 as defined by the invention is attached to the backside of the textile material 3. In the embodiment shown, said reinforcing strip consists of, for example a flat ribbon of felt.

In the embodiment according to FIG. 1, the textile material is folded over upwards around the outer edge of the reinforcing strip 4 and fixed in the area of the inner edge of the reinforcing strip by means of the through-extending seams 5.

In the embodiment according to FIG. 2, the textile material 3 is first sewn to or interlinked with its outer edge on its cleaning side with the edge of the reinforcing strip 4 by means of the seams 5a. The reinforcing strip 4 is then folded over to the back and, by means of the seams 5 disposed on the inner side, secured again on the back side of the textile material 3. In the examples shown, the reinforcing strip 4 is extending across the entire width of the edge area by which the floor-wiping cloth projects beyond the tenting frame 2 sideways. The entire width of the edge area is reinforced in this way over its entire area.

The inner edge of the reinforcing strip 4 practically abuts the outer edge of the tenting frame 2. In this way, the edge area is prevented from being folded up around the inner edge of the reinforcing strip 4. As opposed to a reinforcement by means of seams, in which case the edge areas could flap over to the top in an undesirable way, the reinforcing strip 4 as defined by the invention offers a through-extending reinforcement reaching beyond the holding surface of the tenting frame 2 up to the outer edge.

As an alternative, the reinforcing strip 4 may consist of plastic foil material or other materials that are stiff under bending. For securing this foil material, provision can be made alternatively or additionally for gluing it to the textile material 3.

The representations in FIGS. 3 to 6 show top views of a floor wiping cloth 1 as defined by the invention and shown in FIGS. 1 and 2. These representations clearly show the versatility available for attaching the reinforcing strips 4 as defined by the invention. The reinforcing strips are indicated for that purpose in their installed positions by the shaded areas.

In detail, the transverse edges of the floor wiping cloth 1 (FIG. 3) or the longitudinal edges (FIG. 4) may be

Figure 1. The 128-bit block cipher, E_{128} , and its inverse, D_{128} . The function f is defined as $f(x) = (x \oplus K_1) \ll 1$, where \oplus is the XOR operation and $\ll 1$ is the left shift operation by 1 bit. The function F is defined as $F(x) = f(x) \oplus f(x \ll 1) \oplus f(x \ll 2) \oplus f(x \ll 3) \oplus f(x \ll 4) \oplus f(x \ll 5) \oplus f(x \ll 6) \oplus f(x \ll 7) \oplus f(x \ll 8) \oplus f(x \ll 9) \oplus f(x \ll 10) \oplus f(x \ll 11) \oplus f(x \ll 12) \oplus f(x \ll 13) \oplus f(x \ll 14) \oplus f(x \ll 15)$. The function F is applied to the output of f to produce the final output of the block cipher.

5. The cloth for wiping floors according to claim 1, characterized in that the reinforcing strips (4) consist of textile material.

6. The cloth for wiping floors according to claim 1, characterized in that the reinforcing strips (4) consist of a felt material.

7. The cloth for wiping floors according to claim 1, characterized in that the reinforcing strips (4) consist of plastic foil material.

8. The cloth for wiping floors according to claim 1, characterized in that the reinforcing strips (4) comprise reinforcing ribs.

9. The cloth for wiping floors according to claim 1, characterized in that the reinforcing strips (4) are glued to the textile material (3).

10. The cloth for wiping floors according to claim 1, characterized in that the reinforcing strips (4) are sewn to the textile material (3) of the wiping cloth (1).

11. The cloth for wiping floors according to claim 1, characterized in that the textile material (3) is folded over on the outside around the reinforcing strips (4).

12. The cloth for wiping floors according to claim 1, characterized in that with its outer edge, the textile material (3) is secured with its cleaning side on the edge of the reinforcing strip (4), and that the reinforcing strip (4) is folded over backwards and secured on the back side of the textile material (3).

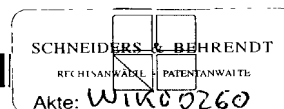
13. The cloth for wiping floors according to claim 1, characterized in that the textile material (3) consists of a carrier fabric to which the cleaning-active fibers (3a) are attached to the cleaning side.

14. The cloth for wiping floors according to claim 1, characterized in that the wiping cloth (1) is cut to an approximately rectangular shape.

R:\Ingrid\Kohlruss et al-8 PCT transl.

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SN, TD, TG).

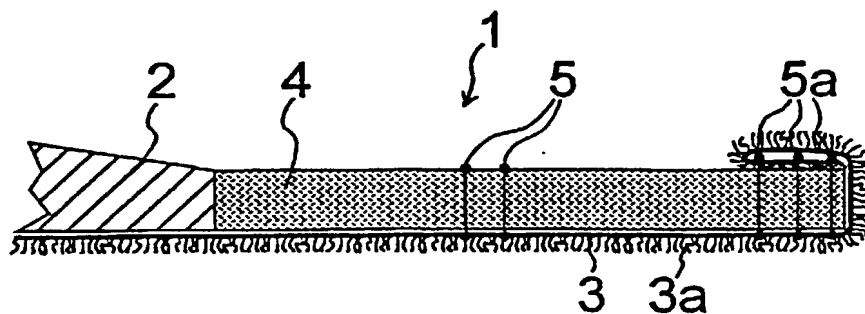
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— Ohne internationalen Recherchenbericht und erneut zu
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Zur Erklärung der Zweibuchstaben-Codes, und der anderen
Abkürzungen wird auf die Erklärungen ("Guidance Notes on
Codes and Abbreviations") am Anfang jeder regulären Ausgabe
der PCT-Gazette verwiesen.

(54) Title: TEXTILE CLOTH FOR WIPING FLOORS

(54) Bezeichnung: TEXTILER BODENWISCHBELAG



(57) Abstract: The present invention relates to a textile cloth (1) for wiping floors. Said cloth consists of a flexible textile material (3) and can be detachably fixed to a tenting frame (2) of a manual cleaning device. The wiping cloth (1) at least partially protrudes over the holding surface of the tenting frame (2) with the edge areas thereof and is stiffened in said edge areas. The aim of the invention is to obtain better cleaning effects and a higher dimensional stability. To this end, flat reinforcement stripes (4) are mounted to the textile material (3) in a fixed manner and at least partially along the edge areas.

(57) Zusammenfassung: Die vorliegende Erfindung betrifft einen textilen Bodenwischbelag (1) aus biegeweichem Textilmaterial (3), der auf einem Spannrahmen (2) eines manuellen Reinigungsgerätes lösbar festspannbar ist, wobei der Wischbelag (1) mit seinen Randbereichen über die Haltefläche des Spannrahmens (2) zumindest teilweise seitlich übersteht und in diesen Randbereichen versteift ist. Um eine bessere Reinigungswirkung und eine höhere Formstabilität zu ermöglichen, schlägt die Erfindung vor, dass entlang der Randbereiche zumindest teilweise flächige Verstärkungsstreifen (4) fest auf dem Textilmaterial (3) angebracht sind.

WO 01/22859 A2

Fig.1

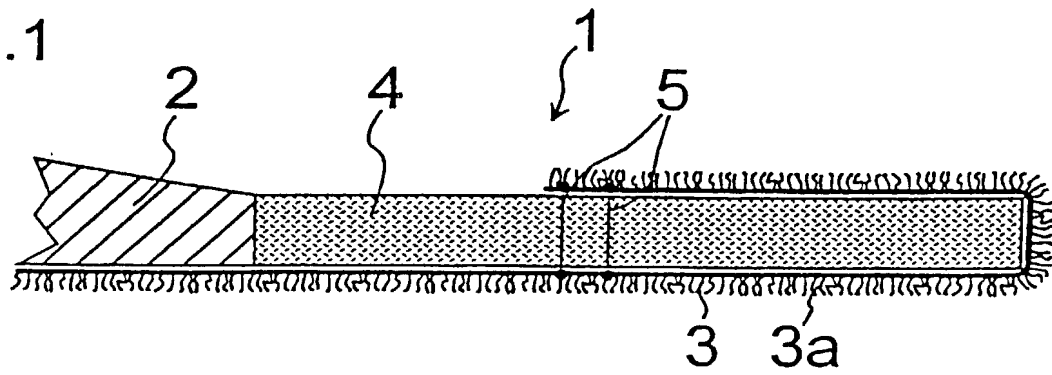


Fig.2

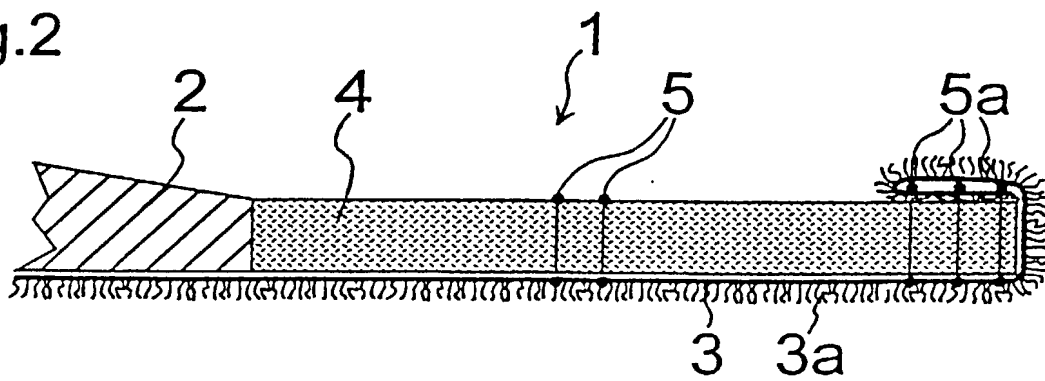


Fig.3

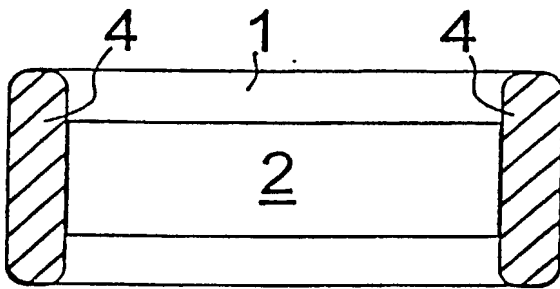


Fig.4

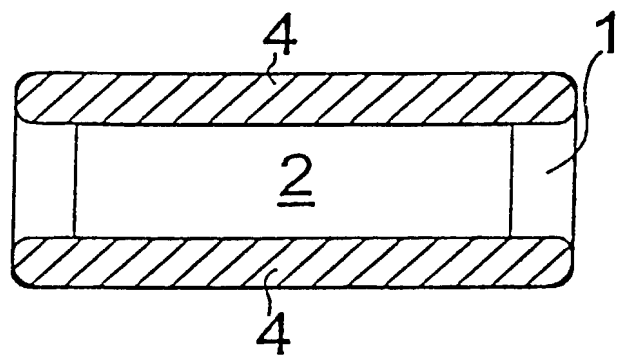


Fig.5

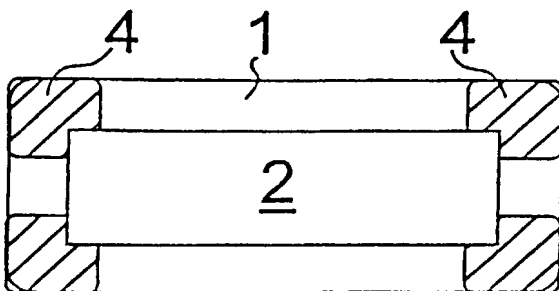
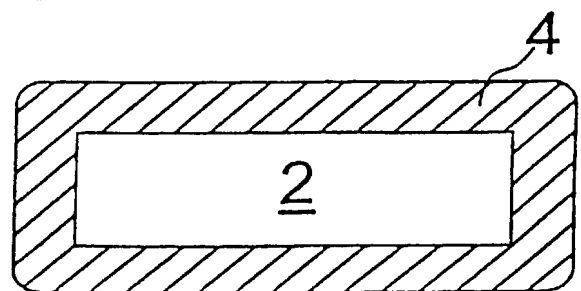


Fig.6



As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

TEXTILE CLOTH FOR WIPING FLOORS

the specification of which (check only one item below):

- ☐ is attached hereto.
- ☐ was filed as United States application
Serial No. _____
on _____
and was amended
on _____ (if applicable).
- ☒ was filed as PCT international application
Number PCT/DE00/03482
on 2 OCTOBER 2000
and was amended under PCT Article 19
on _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed:

PRIOR FOREIGN/PCT APPLICATION(S) AND ANY PRIORITY CLAIMS UNDER 35 U.S.C. 119:

COUNTRY (if PCT, indicate "PCT")	APPLICATION NUMBER	DATE OF FILING (day, month, year)	PRIORITY CLAIMED UNDER 35 U.S.C. 119
GERMANY	199 46 939.3	30 SEPTEMBER 1999	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
			<input type="checkbox"/> YES <input type="checkbox"/> NO
			<input type="checkbox"/> YES <input type="checkbox"/> NO
			<input type="checkbox"/> YES <input type="checkbox"/> NO
			<input type="checkbox"/> YES <input type="checkbox"/> NO

COMBINED DECLARATION FOR PATENT APPLICATION AND POWER OF ATTORNEY
(Includes Reference to PCT International Applications)

ATTORNEY'S DOCKET NUMBER
KOHLRUSS ET AL-8 PCT

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) or PCT international application(s) designating the United States of America that is/are listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in that/those prior application(s) in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application(s) and the national or PCT international filing date of this application:

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U.S. APPLICATIONS			STATUS (Check One)		
U.S. APPLICATION NUMBER	U.S. FILING DATE		PATENTED	PENDING	ABANDONED
PCT APPLICATIONS DESIGNATING THE U.S.					
PCT APPLICATION NO.	PCT FILING DATE	U.S. SERIAL NUMBERS ASSIGNED (If any)			

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. (List name and registration numbers):
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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

SIGNATURE OF INVENTOR 101 <i>Gregor Kohlruß</i>	SIGNATURE OF INVENTOR 202 <i>Oliver Grieb</i>	SIGNATURE OF INVENTOR 303 <i>Hubert Wiesner</i>
DATE 17.04.2002	DATE 17.04.2002	DATE 17.04.2002